

# Aurora II-532 Integra OPO

## Integrated Nd:YAG 532nm Pumped Type II BBO OPO

### Key Features

- Tuning range 670-1064nm and 1064nm to 2.3 $\mu$ m
- Linewidth <4cm<sup>-1</sup>
- Fully integrated pump laser and OPO
- Motorised OPO tuning with optional closed loop wavelength feedback
- OPO optical compensation and 1064nm variable optical attenuator
- Highly stable pump laser and corresponding OPO pulse energy
- 532nm process shutter with energy monitoring as standard
- Full PC control via RS232

### Options Include

- Motorised and closed loop automatic tuning of pump laser harmonics
- Auto-stabilisation of pump energy including power supply control

### Applications

*Photo Acoustic Imaging*

*Laser Induced Fluorescence*

*Photobiology*

*High Resolution Spectroscopy*

*Non Linear Spectroscopy*

*Remote Sensing*

*Process Monitoring*

*Combustion Research*

*Display Manufacture and Testing*



**The Litron Aurora II-532 Integra is an innovative, fully motorised, 532nm Nd:YAG laser and type II BBO OPO integrated into a single system.**

**The Aurora II-532 Integra** range of type II BBO OPOs has been designed with reliability, stability and ease of use in mind. This allows researchers to concentrate on their experiments and industrial systems integrators the peace of mind that their process will be consistent and robust. With a wide choice of integrated and optimised Nd:YAG pump lasers from 10Hz to 200Hz these are truly flexible systems.

The Aurora II Integra is the first of a growing range of multi-wavelength systems where the OPO and pump source are supplied by the same manufacturer to offer a fully integrated single source solution. The Aurora II Integra builds on this with fully featured computer control of both the pump laser and OPO which allows ease of use and simple system integration.

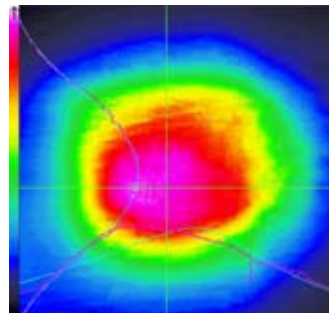


Integrators will benefit from the unprecedented flexibility and usability of this system. Researchers will appreciate its modularity and how the many possible upgrades can support their changing research objectives.

Model	A22-60-10	A22-100-10
<b>OPO</b>		
<b>Wavelength Range</b> <sup>(1)</sup>		
Signal (nm)	670-1064	670-1064
Idler (nm)	1065-2300	1065-2300
<b>Output Pulse Energy</b>		
OPO (mj) <sup>(2)</sup>	60	100
Linewidth (cm <sup>-1</sup> ) <sup>(3)</sup>	<4	<4
Pulse stability (RMS %) <sup>(4)</sup>	<1.3	<1.3
<b>Parameters</b>		
Scanning step signal (nm)	~0.1	~0.1
Scanning step Idler (nm)	~1	~1
Pulse duration (ns) <sup>(5)</sup>	<10	<10
Beam diameter (mm) <sup>(6)</sup>	5	6
<b>Polarisation</b>		
Signal beam	horizontal	horizontal
Idler beam	vertical	vertical
<b>PUMP LASER</b> <sup>(7)</sup>		
Repetition rate (Hz) <sup>(8)</sup>	10*	10*
Pump wavelength (nm)	532	532
Max. pump pulse energy (mj)	300	425
Pulse duration (ns) <sup>(5)</sup>	6-10	6-10
Resonator type	GRM	GRM
Beam divergence (mrad)	<0.5	<0.5
Pulse stability (±%) <sup>(9)</sup>	3	3
<b>Services</b>		
Voltage (VAC)	220-250	220-250
Frequency (Hz)	50/60	50/60
Power phase	single	single
Operating amb temp (°C)	5-35	5-35
Laser cooling	see table**	see table**

Notes

- Optional hands free tuning range 670nm-2.3µm.
- Signal at 800nm.
- Linewidth <4cm<sup>-1</sup> for 670nm-<math>\lambda</math><1064nm.
- RMS % stability at 800nm.
- FWHM – Measured with fast photodiode and >1GHz oscilloscope.
- Measured near field, 1/e<sup>2</sup> diameter at 800nm.
- LPY70X pump laser. Output ports for 1064nm and 532nm are available as an option.
- Repetition rates up to 100Hz are available, please see table. All data provided within this table is for 10Hz models.
- Peak to Peak Energy 100% of pulses.



Typical near field beam profile of Aurora II 100-2 at 800nm.

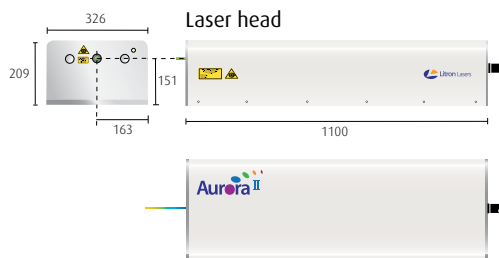
Pump Laser - External Cooling Options		
Pump Energy	300mj	425mj
<b>Frequency</b>		
10Hz	Air	Air
20Hz	Air	Chiller
30Hz	Chiller	Water/water
50Hz	Water/water	Water/water
100Hz	Water/water	Water/water

\*\* Air and water cooled versions available (see table).

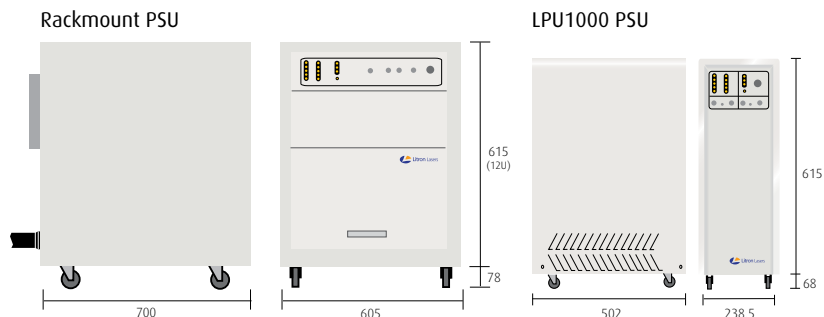
\* High frequency versions available. 20, 30, 50 & 100Hz.

Dimensions	
<b>Laser Head</b>	
(mm)	326 (W) x 209 (H) x 1100 (L)
(Inches)	12.8 (W) x 8.2 (H) x 43.3 (L)
<b>PSU</b>	
12U (mm)	605 (W) x 700 (D) x 615 (H)
(Inches)	23.8 (W) x 27.5 (D) x 24.2 (H)
LPU1000 (mm)	238.5 (W) x 502 (D) x 615 (H)
(Inches)	9.4 (W) x 19.7 (D) x 24.2 (H)

Cooling Requirements	
<b>Air</b>	
Max. air temp (°C)	35
Min. air temp (°C)	5
Humidity % (non condensing)	0-80
Ambient heating (kW)	<2
<b>Water</b>	
Max water temp (°C)	20
Nominal flow rate (lpm)	4-6
Min water pressure (Bar [psi])	2 [30]
Max water pressure (Bar [psi])	4.5 [65]
External water filtration (Micron)	100
Ext. chiller high pressure bypass (Bar [psi])	5 [73]
Ext. chiller thermal load (kW)	~4



All dimensions in mm unless stated.



Our policy is to improve the design and specification of our products. The details given in this document are not to be regarded as binding.

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